

**FACILITY REDUCTION PROGRAM  
ENGINEERING SUPPORT  
(CONTRACT NO. W912DY-04-P-0076)**

**Task #9.4: Site Visit and Demolition Analysis – Riverbank AAP**

**Draft Site Report  
February 22, 2006**

Prepared for:



**US Army Corps  
of Engineers®**  
Huntsville, US Army Engineering  
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## Demolition Assessment Site Report

### OVERVIEW

The team of Richard Diven and Francis Stohosky, working under the Frankie Friend & Associates Facility Reduction Program contract number WD912DY-04-P-0076, conducted a site visit at the Riverbank AAP near Modesto, CA to assess the status and estimate the cost to remove a predominately wood Water Cooling Tower of approximately 9,600sf.



Riverbank AAP Water Cooling Tower

In addition to providing a scope of work summary and environmental characterization of the structure and associated piping, the Team developed a summary cost estimate to remove the cooling tower and nearby concrete saddles and transformer platforms. In summary, this predominately wood structure is not likely to yield reusable/salvageable wood due to the scale and other impregnated materials resulting from the water that passed through the structure for many, many years.

### TECHNCIAL ASSESSMENT

#### A. Preparation

1. The contractor shall apply for, and obtain, a Cal OSHA Demolition Permit which is required for all demolition of structures over 35' in height. The contractor shall determine if any local permits are required and have any such permits in hand prior to commencing operations. Submit permit copies to the DPW.
2. Review any existing drawings of the structure; identify any features, including underground piping that could possibly be impacted by the demolition work. Clearly identify such features and submit a plan for protecting same.

3. Test the debris waste stream to verify its' classification as Construction and Demolition Waste, if required by the disposal site. Prepare a report of testing results and a determination of proper handling of this material. Distribute this report to the RAAP DPW, contractor and landfill operator.
4. Verify that there are no asbestos containing materials present on materials to be removed. See Environmental Section.
5. Install any protection that is deemed necessary from the visual inspection and the drawings.
6. Verify that all utility services to the Cooling Tower have been cut and capped by others prior to commencing demolition work. The make-up water supply line and the hot water delivery line shall be cut and capped in accordance with standard practice, at least 24" below the adjacent grade. The power supply and communication lines should be cut and removed to the nearest junction box or substation feed, as determined by the DPW. Sketches of such terminations shall be supplied to the contractor before demolition operations have commenced.
7. The contractor shall inspect the site and complete the Engineering Survey as required by Cal OSHA.

## **B. Execution**

1. Limits of Removal – All above ground construction Cooling Tower construction is to be removed down to the top of adjacent grades. Also, included is the MCC Building # 61 located at the north end of the Cooling Tower. Above grade, concrete equipment foundations are to remain under this contract. The water containment pond is below grade and shall also remain under this contract. (Note: The containment pond should be filled in and compacted to avoid a fall risk; the slab should also be fractured to permit the migration of ground water. An approximate additional cost for this work is under \$3,500. This issue should be decided before a contract is put out for bid.)
2. Prior to commencing demolition operations, a temporary construction fence shall be erected around the work site to prevent workers and plant personnel from being exposed to the risk of falling materials. During all wrecking operations, a person shall be assigned by the contractor to act as a watchman to ensure no person or vehicle enters the demolition area.
3. In accordance with EPA and California fugitive emission standards, it is imperative that the contractor maintain strict control over dust created by his operations. Water is available from fire hydrants near the work area. At least two charged, 1-1/2 fire hoses shall be located such that the entire work area is always capable of being wetted: these hoses shall also be the primary means of fire protection.

4. Remove all associated mechanical equipment adjacent to the west side of the Cooling Tower, including pumps, diesel generators and piping. The contractor shall obtain a 'Hot Work Permit', as may be required, from the RAAP fire department for any activities that will require the use of a cutting torch. Appropriate wetting methods and/or fireproof shields shall be used with the approval of the RAAP fire department.
5. The contractor may select their best method for demolition of the cooling tower. However, whatever method is selected, it shall be executed in such a manner as to prevent personnel from being endangered at any time and avoid any damage to facilities scheduled to remain.
6. All non-metal debris resulting from the demolition shall be promptly removed from the site and disposed of at a licensed landfill permitted to accept such materials. It is unlikely that any of the wood materials can be salvaged for reuse; however, it is the contractor's option whether or not to salvage some of these materials. All metals, with the exception of small fasters and tie rods must be diverted to a licensed recycling firm or salvaged for resale at the contractor's option.
7. Upon completion of the demolition and the off-site removal of materials, the contractor shall pick up any small debris and sweep concrete slabs so that the site is left in a workman-like manner. Contractor's equipment shall be promptly removed from the site.

### **C. Environmental Work**

#### **1. Process Water Scale**

Six samples of the process water scale were taken from the small wood screen sticks and analyzed for typical process water metals consisting of Lead, Arsenic, Mercury, Silver, Chromium, and Copper.

All samples contained relatively low levels of Lead (27 to 337 parts per million {ppm}), as well as Arsenic (45 ppm), Copper (150 ppm) and Chromium (2,260 ppm). No Lead was detected in an analysis of a sample of the wood debris using the Toxicity Characteristic Leaching Procedure for Lead (TCLP-Lead).

Based on these samples, and assuming the waste stream will include the majority of the non-metal components of the structure, the waste stream will be characterized as typical Construction and Demolition Waste.

#### **2. Transformer/Coolant Oil Tank**

Underground piping associated with the concrete saddles and transformer platforms remains at the site. Dual pipe runs exist for dirty/clean coolant oil servicing the transformers. The concrete saddles supported tanks that housed this oil (the tanks have been removed). It has been reported that the oil has been removed from the

piping and that the piping is PCB-free. Monitoring should be done during the removal of the piping to identify any areas where coolant oil may remain and to avoid/clean up any releases.

### 3. Asbestos-containing Materials

No suspect asbestos-containing materials were observed during the site walk-through; however it is possible that asbestos-containing piping, motor, and pump gaskets may be present. These materials should be sampled prior to disposal, or presumed to contain asbestos.

## **D. Submittals**

Prior to commencing work the contractor shall submit the following:

- 1) Engineering Survey
- 2) Site Specific Safety Plan – (Note: contractors Corporate Safety Plan to be included)
- 3) Site Specific Environmental Plan
- 4) Site Specific Environmental Plan
- 5) Demolition Work Plan
- 6) Recycling/Diversion Plan

Upon completion of work the contractor shall submit the following:

- 1) As-built site drawing showing location of remaining construction features and details of utility terminations.
- 2) Record of all materials hauled off-site; to include point of delivery and weight of materials

Note: The above Scope of Work items should be a part of the normal USACE contract specifications for demolition and environmental activities.

### **Preliminary Budget Cost Estimate Summary**

<b>Description</b>	<b>Cost</b>	<b>Estimated Diversion</b>	<b>Comments</b>

**Expanded Cost Estimate/Diversion Breakout**

Item	Activity Description	Quant.	Item Raw Cost	Estimated Item Cost	Cost/sf	Comments
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**Demolition**

	<b>Permits - Cal OSHA</b>		\$500	\$650		
1	Mobilization/Demob		\$1,200	\$1,584		
2	Temp Fence		\$680	\$898		
3	Cap Utilities		\$0	\$0		
4	Basic Demolition		\$8,320	\$10,982		
5	Trucking C&D Material		\$8,740	\$11,537		
6	Trucking Scrap to Recycler		\$2,027	\$2,676		
7	Grading & Backfill		\$0	\$0		
8	Supervision Allowance		\$1,500	\$1,980		
9	Scrap Value - 80 T x 80		\$6,400	-\$6,400		
	<b>SUB TOTAL</b>			<b>\$23,906</b>	<b>\$2.49</b>	
	<b>Disposal (tipping fees only)</b>					
	C&D Material based on \$41/Ton		\$8,200	\$10,824		200 tons
	Concrete Recycling at \$10/Ton			\$0		
	<b>SUB TOTAL</b>			<b>\$10,824</b>	<b>\$1.13</b>	

**Environmental Costs**

	ACM					
	VAT			0		
	Paint			0		
	Pipe			0		
	Pipe fittings			0		
	Transite			0		
	Roof Material			0		
	<b>SUB TOTAL</b>			0		
<b>GRAND TOTAL</b>				<b>\$34,730</b>	<b>\$3.62</b>	

**Diversion**

	Item		Quantity (tons)	% Diversion		
	Concrete/CMU/Brick					
	Scrap Steel		80	100		
	Timbers					
	C&D		200	0		
	<b>Total</b>		<b>280</b>	<b>29%</b>		